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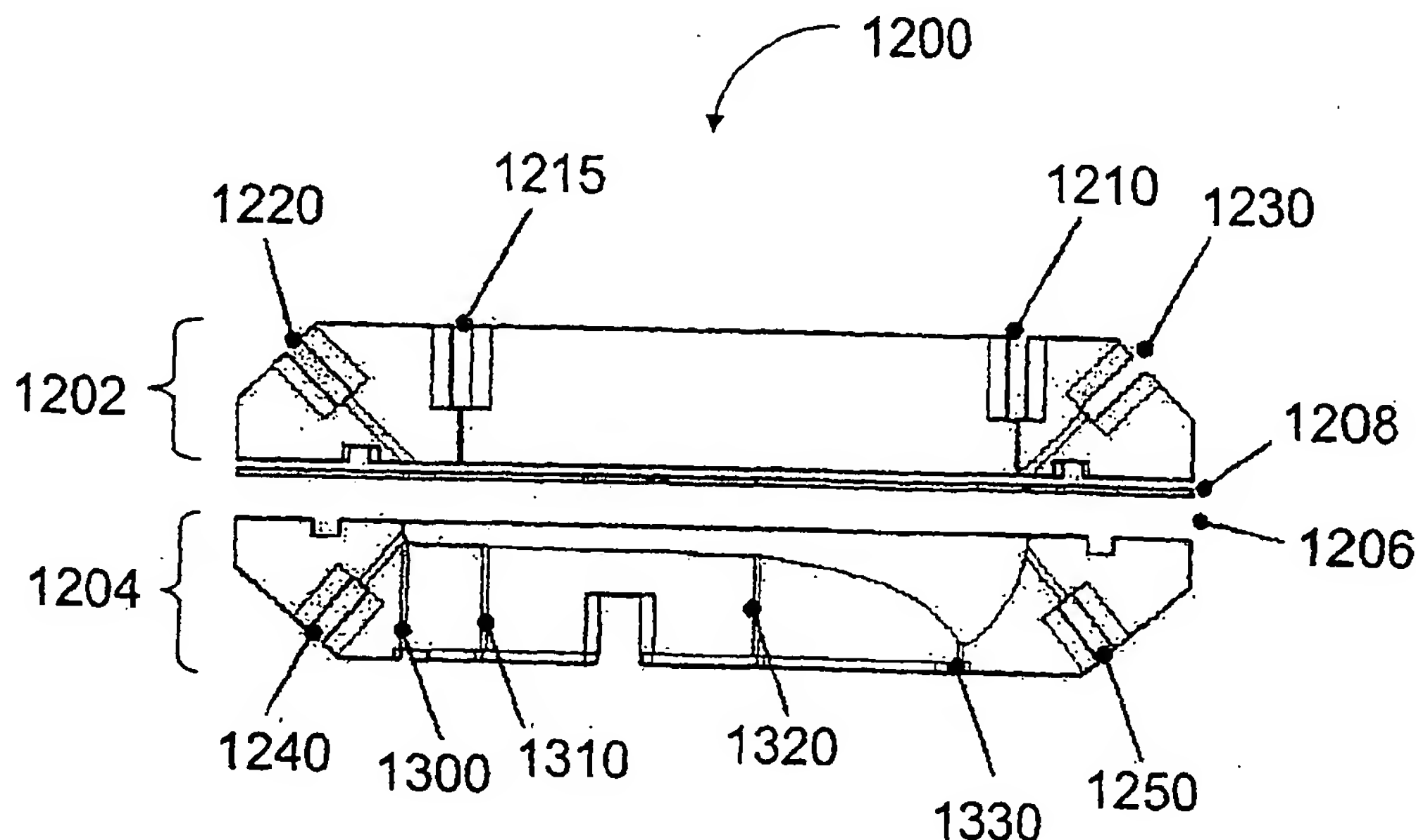
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GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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[Continued on next page]

(54) Title: ELECTROPHORETIC DEVICE COMPRISING SEPARATION CHAMBER, NON-UNIFORM ELECTRODE CHAM-  
BER, AND A POROUS MEMBRANE BETWEEN THEM



(57) Abstract: An electrophoretic device comprises a separation chamber and an electrode chamber, which is non-uniform. The electrode chamber includes two or more electrodes or may include an electrode array. Molecular sieve may be included in the separation chamber, and the molecular sieve is operative to shift the location at which a stationary focused band of a charged analyte forms under a given set of focusing process parameters. Such systems are especially suitable for linking up analytical instruments in a hyphenated fashion, particularly where the instruments have differing system parameters.



**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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# INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G01N27/447

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 298 143 A (IVORY CORNELIUS F ET AL) 29 March 1994 (1994-03-29)	1,5-8, 10,11, 17-23, 26, 28-33, 39-53, 55-58, 62-65, 68-75, 83,84
Y	column 10, line 23 - line 60; figure 20  ----- -/-	9,13-16, 59-61, 66,67

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

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# INTERNATIONAL SEARCH REPORT

International Application No.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/043462 A1 (HUANG ZHENG ET AL) 18 April 2002 (2002-04-18)	21-23, 26,27, 32, 34-46, 50,52, 54-56, 71-84
Y	paragraphs '0052!, '0112!, '0113!, '0144!; claims 15,43; figures 1,2	9,13-16, 59-61, 66,67
X	----- KOEGLER WENDY S ET AL: "Field gradient focusing: A novel method for protein separation" BIOTECHNOLOGY PROGRESS, vol. 12, no. 6, 1996, pages 822-836, XP002277720 ISSN: 8756-7938  abstract; figures 2,7	1,5-8, 10,11, 17-23, 26, 28-33, 39-53, 55-57, 62-65, 68,70
A	----- IVORY C F ET AL: "CONTINUOUS COUNTERACTING CHROMATOGRAPHIC ELECTROPHORESIS" BIOTECHNOLOGY PROGRESS, vol. 6, no. 1, 1990, pages 21-32, XP002277721 ISSN: 8756-7938 figures 1,4,6,10,12	9,13-16, 35-38, 59-61, 77-82
X	----- US 5 582 705 A (LI QINGBO ET AL) 10 December 1996 (1996-12-10)  figure 1	21,24, 25, 71-73, 85,86
X	----- EP 1 044 716 A (CAHILL MICHAEL DR ; NORDHEIM ALFRED PROF DR (DE); DRUKIER ANDRZEY DR ( ) 18 October 2000 (2000-10-18)  figure 3	21,24, 25, 71-73, 85,86

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 03/38170

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-20, 57-70

Electrophoretic device with separation chamber, non-uniform electrophoresis chamber, and porous membrane between them  
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2. claims: 21-56, 71-86

Electrophoresis device with sample treatment devices at the inlet and the outlet of the separation chamber  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 03/38170

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5298143	A	29-03-1994	US 5200050 A	06-04-1993
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